Our Design and Technology Constellation Pathway

Our learning is out of this world

EYFS

Autumn

Me and My World/My Heroes
In EYFS, DT is taught within Expressive Arts and Design. We will be choosing materials to make superheroes and dens. We will be practising mark making, cutting and sticking.

Spring

Castles, Knights and Dragons
We will be making dragon pictures using different Textures, techniques and tools.

Summer

Science Detectives
We will be learning how materials and tools can be used for different techniques. We will choose different resources to make a model of a skeleton.

Year 1

Autumn

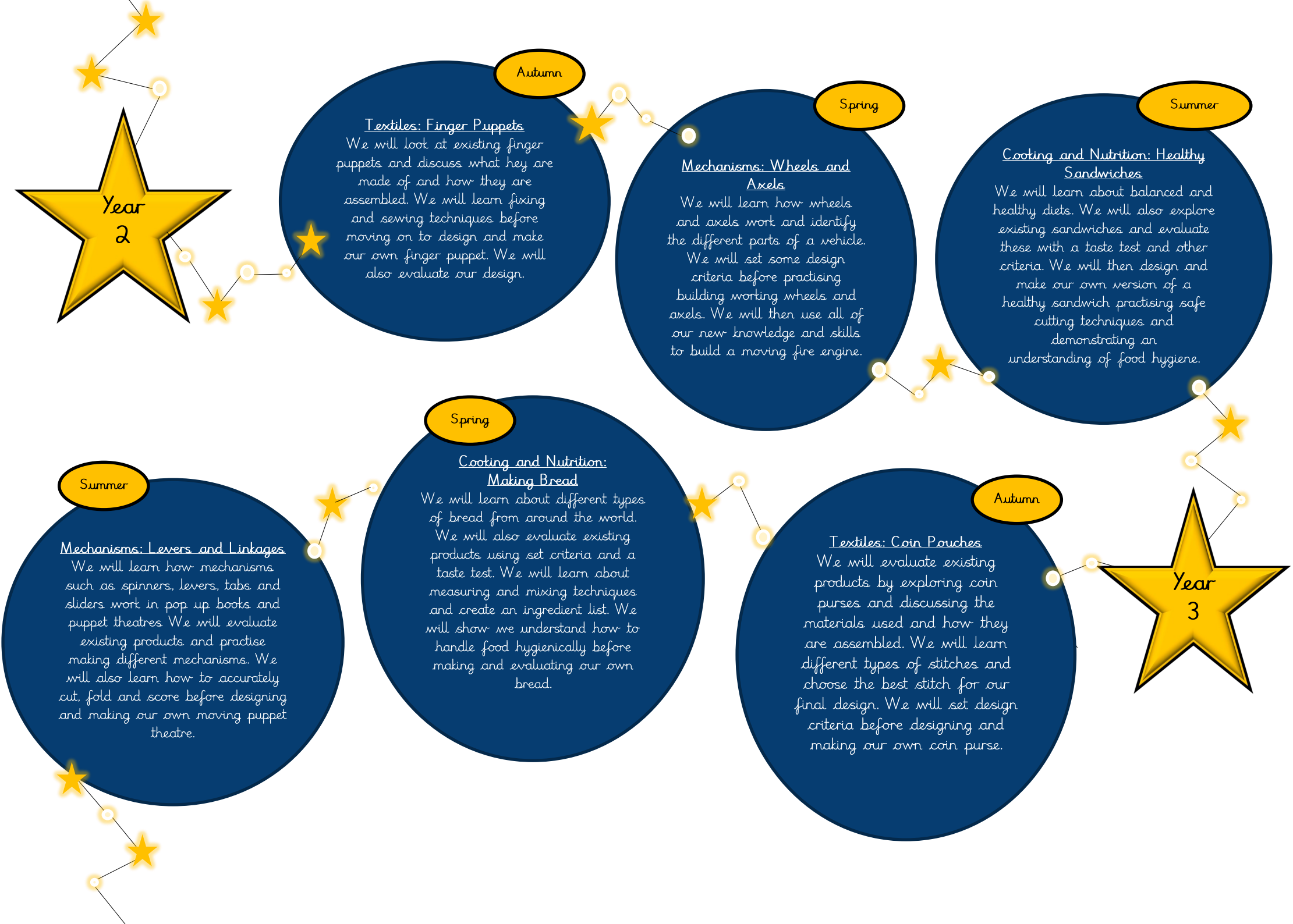
Cooking and Nutrition: Fruit Salads
We will learn about different fruits and their names and complete a taste test.. We will evaluate existing fruit products and use this information to design and make our own fruit salad. We will learn how to cut food safely and how to handle food hygienically.

Spring

Mechanisms: Pushes, Pulls and Levers
We will evaluate books with moving parts and discuss how they work. We will learn about levers and sliders and how they make the parts move. We will design and make a moving picture book linked to our history learning on transport.

Summer

Freestanding Structures
We will learn what a structure is and how they are made to be strong and sturdy. We will evaluate existing structures before designing and making a chair for baby bear. We will learn about joining techniques.


Year 2
Autumn
Textiles: Finger Puppets
We will look at existing finger puppets and discuss what hey are made of and how they are assembled. We will learn fixing and sewing techniques before moving on to design and make our own finger puppet. We will also evaluate our design.
Spring
Mechanisms: Wheels and Axels
We will learn how wheels and axels work and identify the different parts of a vehicle. We will set some design criteria before practising building working wheels and axels. We will then use all of our new knowledge and skills to build a moving fire engine.
Summer
Cooking and Nutrition: Healthy Sandwiches
We will learn about balanced and healthy diets. We will also explore existing sandwiches and evaluate these with a taste test and other criteria. We will then design and make our own version of a healthy sandwich practising safe cutting techniques and demonstrating an understanding of food hygiene.
Year 3
Autumn
Textiles: Coin Pouches
We will evaluate existing products by exploring coin purses and discussing the materials used and how they are assembled. We will learn different types of stitches and choose the best stitch for our final design. We will set design criteria before designing and making our own coin purse.
Spring
Cooking and Nutrition: Making Bread
We will learn about different types of bread from around the world. We will also evaluate existing products using set criteria and a taste test. We will learn about measuring and mixing techniques and create an ingredient list. We will show we understand how to handle food hygienically before making and evaluating our own bread.
Summer
Mechanisms: Levers and Linkages
We will learn how mechanisms such as spinners, levers, tabs and sliders work in pop up books and puppet theatres. We will evaluate existing products and practise making different mechanisms. We will also learn how to accurately cut, fold and score before designing and making our own moving puppet theatre.

Year 4

Autumn

Structure: Photo Frame

We will evaluate existing photo frames and analyse the material used and how they are made to be stable. We will investigate how to build stable structures and make a protype of a finished photo frame. We will set design criteria considering who the frame is for and what it will be used for. We will then design and make our own photo frame before evaluating our product.

Spring

Mechanisms: Pneumatics

We will explore objects that use air to make them work and consider what the air does and how it works. We will explore making simple pneumatic systems with balloons and also revise how to make hinges. We will consider our target audience and use in our design criteria before designing and making a moving monster.

Summer

Electrical and Computer Control/ Making Pizzas

We will explore computer systems and learn how algorithms and coding can be used to make a model move. We will use computers to set instructions for our model and debug any issues that arise.

We will also be revising our knowledge of healthy food and mixing ingredients to make pizzas.

Year 5

Autumn

Cooking and Nutrition: Making Soup

We will build on our knowledge of balanced diets by learning about seasonal food and where food comes from. We will practise cutting and preparing food carefully and accurately before planning and making a seasonal soup. We will evaluate our soup against set criteria after it is made.

Spring

Structures: Musical Instruments

We will evaluate existing musical instruments, analysing how they are made and the material they are made from. We will explore making different sounds with containers and other resources as well as learning how materials can be strengthened. We will combine all of our learning by designing and making our own musical instruments.

Summer

Textiles: Ipad Cases

We will explore existing Ipad cases and discuss how they are made and what materials are used. We will revise sewing techniques and build on this by learning how to sew buttons and other embellishments. We will use design criteria to design and make an Ipad case.

Year 6

Autumn

Mechanisms: Cams, Wheels and Axels

We will investigate toys that have cams and explore which parts move and how the parts are attached. We will build prototypes and models before practising assembling different cams. We will set a design brief and explore purpose and audience before designing and making our own moving toys.

Spring

Cooking and Nutrition: Meal on a Budget

We will revisit our previous learning on healthy, balanced meals and seasonal food to design and make a meal on a given budget. We will plan an ingredients list after researching costs. We will show correct cutting and food preparation techniques as well as evaluating our final product.

Summer

Structures and Electrical Circuits: Lighthouses

We will learn about lighthouses and why they have been needed throughout history. We will practise joining and strengthening techniques as well as building prototypes to practise. We will demonstrate correct sawing techniques before designing and building a sturdy lighthouse with wood. We will build on our existing understanding of electrical circuits by turning our lighthouse light on with a working switch.

KS3

At KS3 pupils will learn more about the following:

Cooking and Nutrition: understand and apply the principles of nutrition and health; cook a range of dishes showing an understanding of a healthy and varied diet; become competent in a range of cooking techniques and understand the source, seasonality and characteristics of a broad range of ingredients.

Technical Knowledge: understand and use the properties of materials; understand how mechanical systems enable changes in movement and force; understand how more advanced electrical systems can be powered; apply computing to embed responses in products.

At KS3, pupils will also expand their learning on the following:

Design: use research to identify and understand user needs; identify and solve their own design problems; develop specifications for designs; develop and communicate design ideas using annotated sketches, detailed plans and mathematical modelling.

Make: select from and use specialist tools, techniques and processes including computer-aided manufacture; select from and use a wider, more complex range of materials.

Evaluate: analyse the work of past and present professionals; investigate new and emerging technologies; test, evaluate and refine their ideas and products against specification; understand developments in design and technology.